

REMARKS

Claims 23-51 are pending in this application. In the aforementioned Office Action, the Examiner allowed claims 36 and 45-51, rejected claims 23-30, 32-35, 37-42 and 44, and objected to claims 31 and 43. The Applicants are amending claims 23, 33, and 37 by this Response. The Applicants request (re)consideration and allowance of claims 23-35 and 37-44 in view of the amendments and remarks set forth herein.

Rejections under 35 U.S.C. § 102

In paragraph 3 of the Office Action, the Examiner rejected claims 23, 24, 27-30, 32-35, 37, 39, 42 and 44 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Number 4,821,208 to Ryan et al. (hereinafter "Ryan"). In support of this rejection the Examiner asserted that Ryan teaches

- a codeword portion for storing at least two codewords (Fig. 1: color map RAM 4 or 5 or 6);
 - a bitmap portion for storing a set of indices (Fig. 1: index register 17 or 27 or 37);
- wherein said codewords define at least three colors that approximate the pixel color set (col. 4, lines 13-15), and said indices map the pixel color set to at least one of said at least three colors (col. 14, lines 56-59).

The Applicants respectfully traverse this rejection as applied to amended independent claims 23, 33, and 37. The Applicants submit that Ryan does not in fact teach the limitations of a codeword portion for storing a codeword(s); a bitmap portion for storing a set of indices, the bitmap portion constructed by a bitmap construction module utilizing the codeword portion associated with the bitmap portion; wherein the codeword(s) defines a set of colors that approximate a pixel color set, and said indices map the pixel color set to at least one of the colors, all of which are recited in claims 23, 33, and 37. The approach embodied in the Ryan reference is clearly distinguishable from the claimed data format. The Examiner asserts that the codeword portion limitation of claims 23, 33, and 37 is taught in FIG. 1 by the RAM 4, 5, or 6. However, a close reading of Ryan, at column 4, lines 13-16, reveals that "[t]he first, second and third

color map memories 4, 5 and 6 may store values of green, red and blue drive signals, respectively, for direct application to the color display device.” (emphasis added). In other words, the color map memories (RAMs) 4, 5 and 6 of Ryan simply supply color component signals to a display apparatus. (column 3, lines 45-47). Ryan does not teach codewords. The RAM of Ryan are not codewords and are different than the codewords of the present invention. The claimed “codeword” limitation refers to an n -bit data string, wherein n is an integer value, that identifies a pixel property (e.g., a color component). (page 19, lines 11-13). Codewords provide points in a pixel space from which quantized pixel values may be inferred. The quantized pixel values are a limited subset of pixels in a pixel space that are used to represent an image block. (page 21, lines 17-20).

Further in contrast to Ryan, claims 23, 33, and 37 recite a limitation that “the bitmap portion [is] constructed by a bitmap construction module utilizing the codeword portion associated with the bitmap portion.” According to the claimed approach, the bitmap construction module constructs the image block bitmap using codewords associated with a block. Colors in the block are mapped to the closest color associated with one of the quantized colors specified by, or inferred from, the codewords. The result is a color index identifying each pixel in the block with an associated quantized color. (page 29, lines 5-10).

The approach embodied in the claims offers substantial advantages over the Ryan approach. By using codewords in accordance with the claimed invention, the effective data size of an image may be substantially reduced, for example, from 24 bits per pixel to four bits per pixel. The system embodied in the claims also addresses transparency issues by allowing for codewords to be used with a transparency identifier. (page 30, lines 13-17). The codewords also reveal the block type (e.g., transparency or not). (page 38, lines 11-14).

Moreover, by using codewords the system embodied in the claims reduces the microchip space required for a decoder system because the decoder system only needs to decode each pixel to a set of colors determined by, e.g., two codewords. (page 44, lines 18-20). Efficiency of the system of the claims is due, in part, to the fact that the

codewords serve as reference pixel values, such as colors, from which quantized pixel values are derived. A bitmap construction module then maps each pixel color to one of the derived quantized colors. The codewords and bitmap are output as encoded image blocks. (Abstract).

In sum, Ryan fails to teach or suggest multiple limitations of independent claims 23, 33, and 37, and Applicants therefore submit that these claims are patentable over Ryan. Claims 24-32, 34-35 and 38-44, which respectively depend from independent claims 23, 33, and 37 and inherit all the limitations thereof, are submitted to be patentable over Ryan for at least the reasons set forth above in connection with the independent claims.

Rejections under 35 U.S.C. § 103

In paragraph 5 the Examiner rejected claims 25, 26, 38, 40 and 41 under 35 U.S.C. § 103(a) as being unpatentable over Ryan in view of U.S. Patent Number 5,822,465 to Normille et al. (hereinafter "Normille"). As stated herein, Ryan is deficient in that it does not teach, inter alia, the codewords of claims 23, 33 and 37. Normille also fails to teach the codewords of claims 23, 33 and 37. Therefore, Normille does not cure the deficiencies of Ryan. Claims 25 and 26 depend from claim 23 and are patentable for at least the same reasons. Claims 38, 40 and 41 depend from claim 37 and are patentable for at least the same reasons.

Amendments Due to Typographical, Clerical or Editorial Errors or Amendments Made for Other Reasons

The Applicants have amended allowable claim 45, line 12, to correct a clerical error, changing the word "first" to -second--.

Allowable Subject Matter

The Applicants thank the Examiner for indicating allowable subject matter in paragraphs 6 and 7. In paragraph 7 the Examiner objected to claims 31 and 43 as being dependent upon a rejected base claim, and indicated that the claims would be allowable

if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, claims 31 and 43 depend from claims 23 and 37, respectively, which Applicants have argued above as being allowable. Therefore, claims 31 and 43 are allowable.

Attached hereto is an appendix entitled "VERSION WITH MARKINGS SHOWING CHANGES MADE," which is a marked-up version of the changes being made to this application by this Response.

Applicants respectfully request that the Examiner enter this Amendment, (re)consider the pending claims, and issue a Notice of Allowance. If the Examiner believes a telephone conference would expedite prosecution of this application, Applicants request that the Examiner telephone the undersigned at the number below.

Respectfully submitted,

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